

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A CDMA receiving device for estimating a signal power and an interference noise power of a received signal for each of a plurality of fingers, and combining a demodulated signal by using a signal-power-to-interference-noise-power ratio estimated from ~~these~~ the estimated signal power and interference noise power of each of the plurality of fingers, characterized by:

interference-noise-power calculation means (106, 206, 306, 406) for estimating an interference noise power for each of the plurality of fingers ~~in~~ during a current slot;

storage means (110, 217, 317, 425) for storing therein an estimated value for the interference noise power estimated for each of the plurality of fingers ~~in~~ during a last valid slot before ~~a~~ the current slot;

first averaging means (108, 208, 308, 408) for averaging , for each of the plurality of fingers, an estimated value for the interference noise power estimated ~~in a~~ during the current slot by said interference-noise-power calculation means for a finger (106, 206, 306, 406) and the estimated value for the interference noise power stored in said storage means (110, 217, 317, 425) during the last valid slot before the current slot for the finger to generate an averaged estimated value for the interference noise power;

first judging means (115, 213, 313, 421) for judging ~~in which slot~~ when each of the plurality fingers ~~finger becomes valid~~ encounters a valid slot after a radio link is established; and

first switching means (112, 215, 315, 423) for coupling ~~storing the interference noise power in a current slot estimated by~~ said interference noise power calculation means (106, 206, 306, 406) ~~into~~ to said storage means (110, 217, 317, 425) based on a judged result by said first judging means (115, 213, 313, 421).

2. (original): The CDMA receiving device according to Claim 1, wherein said first switching means (112, 215, 315, 423) stores the estimated value for the interference noise power estimated in the current slot by the interference noise power calculation means (106, 206, 306, 406) into said storage means (110, 217, 317, 425) if said finger is first judged to be valid after the radio link is established by said first judging means (115, 213, 313, 421).

3. (original): The CDMA receiving device according to Claim 1 or 2 further comprising:

second judging means (223) for judging whether or not each finger is successively in a valid state for a given period of time;

second averaging means (221) for averaging the estimated values for the interference noise power among the fingers;

second switching means (219) for allowing said second averaging means (221) to average the average estimated value for the interference noise power, which is averaged by said first averaging means (208), based on a judged result by said second judging means (223); and

third switching means (210) for outputting either one of an averaged result by said first averaging means (208) and an averaged result by said second averaging means based on a judged result by said second judging means (223).

4. (original): The CDMA receiving device according to Claim 3, wherein:

said second switching means (219) allows said second average means (221) to use the estimated value for the interference noise power for a finger, if said finger is judged to be successively valid for a given period of time by said second judging means (223); and

said third switching means (210) outputs an averaged result by said second averaging means (221) instead of said estimated value for the interference noise power for said finger if said finger is judged to be valid though not continued for a given period of time by said second judging means (223).

5. (original): The CDMA receiving device according to Claim 1 or 2, wherein said storage means (317) stores only the estimated value for the interference noise power of one slot before for each finger, said CDMA receiving device further comprising:

second judging means (319) for judging whether or not each of the fingers is successively in a valid state for a given period of time; and

second switching means (310) for switching whether or not the average estimated value for the interference noise power averaged by said first averaging means (308) is output based on a judged result by said second judging means (319).

6. (original): The CDMA receiving device according to Claim 5, further comprising:
signal-power-to-interference-noise-power ratio calculation means (324) for calculating a signal-power-to-interference-noise-power ratio based on an output of said second switching means (310), and demodulated-signal combining means (328) for combining the demodulated signal based on a calculated result by said signal-power-to-interference-noise-power ratio calculation means (324); and

third switching means (326) for outputting the demodulated signal to said demodulated-signal combining means (328) based on the judged result by said second judging means (319).

7. (currently amended): The CDMA receiving device according to Claim ~~5~~^{or 6}, wherein:

said second switching means (310) outputs an output of said first averaging means (308) if said finger is judged to be successively valid for a given period of time by said second judging means (319), and does not output the average estimated value for the interference noise power averaged by said first averaging means (308), if said finger is judged not to be successively valid for a given period of time by said second judging means (319); and

said third switching means (326) outputs said demodulated signal to said demodulated-signal combining means (328), if said finger is judged to be successively valid for a given period of time by said second judging means (319), and does not output the demodulated signal to said demodulated-signal combining means (328), if said finger is judged not to be successively valid for a given period of time by said second judging means (319).

8. (original): The CDMA receiving device according to Claim 1 or 2, wherein said storage means (425) stores therein only the estimated value for the interference noise power of one slot before for each finger, said CDMA receiving device further comprising:

demodulation means (410) for demodulating the received signal by using an arbitrary synchronization timing, second interference-noise-power calculation means (412) for estimating the interference noise power in said current slot for said demodulated signal demodulated by said demodulation means (410), second averaging means for averaging an interference noise power in said current slot estimated by said second interference noise power calculation means (412) and the estimated value for the interference noise power stored in said storage means (425); and

second judging means (419) for judging whether or not said finger is successively in a valid state for a given period of time, and second switching means (416) for outputting either one of an averaged result by said first averaging means (408) and an averaged result by said second averaging means (414) based on the judged result by said second judging means (419).

9. (original): The CDMA receiving device according to Claim 8, wherein said second switching means (416) outputs an output of said first averaging means (408), if said finger is judged to be successively valid for a given period of time by said second judging means (419), and outputs an output of said second averaging means (414), if said finger is judged not to be successively valid for a given period of time by said second judging means (419).